NEWS REPORT

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The Natural Sciences Program in UNESCO

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THE following quotations from UNESCO's "Proposed Programme and Budget Estimates for 1953 and 1954" give the basic concepts of the value of science to UNESCO's aims and outline the general fields of UNESCO's scientific activities:

"UNESCO's work in the natural sciences is conditioned by their very character: first and foremost, their universality, which makes them an ideal channel for mutual understanding; secondly, their utility, deriving from the power man thus acquires over nature; and lastly, the spectacle of the steady progress of his own works, which cannot but be a source of inspiration to man."

"UNESCO's natural sciences programme can therefore be divided into three sections: the first, relating to the development of international collaboration; the second, to the international planning of scientific research for the improvement of man's living conditions; and the third, to science teaching and the spread of scientific knowledge and methods throughout the world."

International Scientific Cooperation

UNESCO has promoted international scientific cooperation by encouraging the federation of international scientific societies and unions and by giving them financial help. The following are the three principal federations: *1)* the International Council of Scientific Unions (ICSU), *2)* the Council of International Organizations of Medical Sciences (CIOMS), and *3)* the Union of International Engineering Associations (UATI). In the budget estimates for 1953 and 1954, priorities were established for the various program items, the highest being A.1, the next highest, A.2, followed by B.1 and B.2. Under priority A.1, the following subventions were proposed: ICSU, $180,000; CIOMS, $21,000; UATI, $10,000. Under priority A.2, an additional $10,000 was proposed for ICSU because of the inclusion of two new unions, the International Union of Physiological Sciences and the International Mathematical Union. Because of budget reductions, however, this additional amount could not be allotted.

Editor's Note: Dr. Stakman was one of the United States delegates to the Seventh General Conference of UNESCO in Paris, November 12–December 11, 1952. In this article, he reports some of the more important decisions in the field of the natural sciences reached at the Conference.

UNESCO has also made grants each year for one or two scientific activities that are considered of special importance, for example: financial assistance was given in 1950 to the International Congress of Mathematicians, which was held at Cambridge, Mass., and to a conference convened by the American Mathematical Society in New York City to consider the reestablishment of an international mathematical union. In 1951, a subvention was given to the Australian and New Zealand Association for the Advancement of Science to help pay travel expenses of scientists attending an international symposium on "Genetics and Evolution" and for the publication of papers presented at the symposium. The special activity chosen for 1953 is an international symposium on "Physical and Biological Oceanography," which is being organized by the Eighth Pacific Science Congress.

The total amounts proposed in the budget estimates for 1953 for all activities under the general heading "Development of International Scientific Cooperation" were $273,539 under priority A.1 and $25,000 under priority A.2. Virtually all items under priority A.2 have been, or are likely to be, eliminated because of shortage of funds. As the total budget proposal for 1953 for priority A.1 was $838,079, the percentage of the total allotted to international scientific cooperation would be approximately thirty-three per cent.

Contribution to Research

The general objective of this section of the natural sciences program is to improve living conditions of mankind through planned and coordinated research. The Economic and Social Council of the United Nations suggested some time ago that a survey be made of research institutes and laboratories with a view to encouraging cooperation between them on problems of international importance. It is obvious also that there would be an advantage in setting up international laboratories when the cost of establishment and maintenance is too high for any one country. A general policy has been laid down that UNESCO will encourage the formation of such international institutes and will help in planning them, but will not operate them nor support their operation. The proposed International Computation and Applied Mathematics Laboratory has had first priority for several years, and it has been decided to establish it in Rome when enough countries have signed the agreement and have promised financial support. UNESCO has assisted in planning a European Center for Nuclear Research, which will be supported by a number of countries and will be located in Geneva. It appears now that this laboratory will actually be established and will be functioning within a relatively short time.

There has been virtual unanimity of opinion at the last two general conferences of UNESCO regarding the importance of coordinating research on scientific problems concerning the arid zone. An Advisory Committee on Arid Zone Research has been established to help promote and coordinate research in hydrology, climatology, ecology, and the other branches of science that are important in increasing the productivity of arid and semi-arid regions. This project obviously is potentially of great practical importance because of the fact that there are vast areas of relatively unproductive land in many countries, including some with a high density of population.

At the Seventh General Conference in Paris, the working party in the natural sciences recommended that preliminary steps be taken to help coordinate research on humid tropical zones and on oceanography. These recommendations were adopted by the Program Commission and indicate gratifying progress in attempts to help coordinate research which, it is hoped, will lead to greater productivity of land areas that are now relatively non-productive. As many densely populated areas of the world must supplement food products from agricultural lands with food products from the sea, the study of ocean resources and the best means of utilizing them is of vital importance.

The total allotments for this section are approximately $100,000 annually, which is about twelve per cent of the total budget.

Teaching and Dissemination of Science

Many countries in which science is rather poorly developed need and want help in the form of manuals, audio-visual aids, plans for scientific apparatus, and information regarding teaching methods and laboratory equipment. These needs are being met insofar as possible. Encouragement and materials are furnished to associations of science teachers, science clubs, and other organizations interested in various phases of science.

Several traveling science exhibitions have been organized and shown in different parts of the world. One on physics and astronomy has been shown in a number of Latin American countries and has aroused widespread interest. Another, entitled "Our Senses and Knowledge of the World," has been shown in southeastern Asia; another, on plastics, was shown in several European countries in 1952; and several others have been planned on various subjects of scientific interest and of practical importance. Unfortunately, these exhibitions will be either greatly curtailed in 1953 and 1954 or abandoned entirely because of lack of funds.

The Division of Natural Sciences of UNESCO was requested several years ago to study the question of the impact of science on society and to disseminate information regarding it. Accordingly, the quarterly review *Impact* was established. It is still in the experimental stage but it is hoped that it may become useful. It already is in demand in the Middle East and certain other regions. The amount budgeted for the publication has, however, been decreased.

Several discussion themes in the general field of the social and international aspects of science have been developed. In 1949 and 1950, "Food and People" was selected for world-wide discussion, and a number of pamphlets of considerable value was printed and distributed. Judging by the interest aroused, this topic was a very happy choice, and the discussion led to a deeper and more widespread realization of the food problem in relation to increasing population. The theme for 1952 was "Energy in the Service of Man." In 1953, a new theme is to be selected and the basic documentation will be issued as a supplement to *Impact*.

The total cost of this section of the program in priority A.1 was about $80,000 in 1952, and, for 1953 and 1954, the proposed sums are approximately $121,500 and $126,000, respectively. The funds for the latter two years, however, will probably be considerably reduced so that the percentage expenditure of the total natural sciences budget is likely to be about ten per cent.

Science Cooperation Offices

The science cooperation offices of UNESCO are probably well known. In 1952, four such offices and two branch offices were in operation: in Montevideo, for Latin America; in New Delhi, for southern Asia; in Cairo, for the Middle East, with a branch in Istanbul; at Djakarta, for southeastern Asia, with a branch at Manila.

These science offices have been extremely valuable in stimulating and coordinating scientific activities in the areas they serve and were highly eulogized by representatives from the various areas at the recent General Conference in Paris. The Philippine Government came to the rescue of the branch office at Manila (the abolition of which was threatened because of shortage of funds) by making a financial grant to help support it.

The total costs of priority A.1 activities of these science offices were estimated at $224,586 for 1953 and $231,829 for 1954, but these amounts will probably have to be reduced. It is a safe estimate that approximately thirty per cent of the natural sciences budget will go to support the science cooperation offices.

Conclusion

The relative emphasis being placed on the major phases of the natural sciences program is shown by the financial support given to each as revealed in the figures quoted in preceding paragraphs. Although these figures are approximate and do not take into consideration a subsequent overall budget reduction of about 7.8 per cent

required by the General Conference, they are sufficiently accurate for present purposes. According to the most recent information, the natural sciences program will receive approximately $800,000 in 1953 and slightly less in 1954. Of these amounts, about $115,000 annually, or roughly fifteen per cent of the budget, will be needed for administrative costs.

A Natural Sciences Working Party, comprising official representatives from fifteen countries, allocated the reductions to the various program items. The consensus was that it would be better to eliminate some activities entirely rather than to apply a uniform percentage cut to all. Although there were some sharp differences of opinion, a large majority favored high priorities for International Scientific Cooperation, Contribution to Research, and Science Cooperation Offices. Therefore, the highest percentage reduction was made in Teaching and Dissemination of Science.

Although the UNESCO program does not, and probably cannot, satisfy all scientists in all countries, especially as interests and needs vary greatly, there has been progress in concentrating the program on important international aspects of basic and applied science.

Housing and Building in Hot-Humid and Hot-Dry Climates

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THE military and industrial expansion to other parts of the world initiated in World War II has resulted in vast numbers of temperate-zone people moving to tropical and subtropical areas. In these zones, housing is largely borrowed from more northern regions or adapted from native methods, and the benefits of building research have yet to be realized. This is due, in part, to the fact that building technology has traditionally dealt with design and construction in temperate zones, population concentrations having occurred first in these areas. Then again, until recent years, there was a general migration toward northern industrial areas which further contributed to a disinterest in the problems of living in warm climates. Today, however, the process is reversing itself, as is evidenced by the population increases in our southern and southwestern states; and this, coupled with the movement of great numbers of temperate-zone people to hot areas, makes the subject of building for these climates of increasing importance.

It was with these factors in mind that the Building Research Advisory Board of the National Academy of Sciences–National Research Council recently organized a conference on "Housing and Building in Hot-Humid and Hot-Dry Areas." The terms "hot-humid" and "hot-dry", chosen in preference to the rather indefinite and controversial word "tropical", adequately express warm-climate living conditions for over three-quarters of the globe, and it was soon apparent that there was an international interest in the subject the Building Research Advisory Board had set out to explore.

There has, of course, been considerable work done on tropical housing, especially by countries having extensive colonial possessions or proprietary interests in such continents as Africa and Asia. The emphasis in these studies, however, has fallen on native requirements, with direct reference to native economy, sociology, customs, and readily available materials. This is restrictive in that it precludes bringing the best in building technology to bear on the problems. Thus the Building Research Advisory Board slanted its conference away from native problems and approached the material with a view to making so-called

"climatically displaced persons" comfortable and efficient. This did not necessarily imply that the methods put forward at the symposium were unduly expensive or elaborate. In fact, some of the most effective techniques are simply the result of careful design and thorough technological investigation.

The first part of the conference was devoted to an examination of physiological and psychological tolerances in the human being. This was a natural prelude to establishing criteria for effective housing in these climates. Though it is difficult to establish standards of human comfort, since this factor varies considerably with different individuals, this first session brought out some remarkable methods of evaluating effects of temperature, radiation, air movement, evaporation, and humidity. Victor and Aladar Olgyay of Massachusetts Institute of Technology have what might be called a workable pattern for correlating these manifold factors, and their contribution is notable in what is virtually a new science. Douglas H. K. Lee of Johns Hopkins University delineated the various methods of heat exchange in detail with regard to human temperature balance. One consideration which recurred frequently at the meeting, even though time limitations dictated its exclusion originally, was the psychological effect of various materials, arrangements, etc. As Ralph Walker of the architectural firm of Voorhees, Walker, Foley, and Smith pointed out, this element is often at odds with the practical things to do with reference to simple physical comfort. Man's soul, apparently, must be comforted along with his body, so that a thick, windowless wall facing the southern sun is not altogether a blessing.

The second part of the conference concentrated on the technology of building for these climates, and it was evident that a surprising amount of research on these problems has been carried out. The problem here is to assemble these ideas and techniques so that they can be used generally, which is one of the Board's goals in organizing these symposia. There were naturally blank areas in need of research which came to light in the course of the meeting. Among these was the need for more data on the heat transmission characteristics of various combinations of materials and the need for more research on such matters as diffuse radiation, which, though of less intensity than direct sunlight falling through a window, operates throughout the entire span of daylight.

Much work has been done on solar control through shading devices. It was indicated at the conference that the protection afforded by these devices can be calculated to a nicety for a particular house in a particular latitude at any time of year. Designing for natural ventilation is another method for relieving the stress of tropical living, although the effectiveness of this depends on a thorough study of air-flow patterns such as the one presented at the meeting by Robert H. Reed of the Texas Engineering Experiment Station. The cooling effect of trees and shrubs, particularly with reference to transpiration activity, is a comparative newcomer in the field of warm-climate comfort. This aspect was reviewed by Robert B. Deering of the University of California.

Hot-humid and hot-dry climates present very specialized problems in foundations, structural methods, and the performance of materials. The University of Texas has done considerable research on structures and foundations, and R. F. Dawson and J. Neils Thompson presented their most recent findings to the conference. George M. Rapp of the John B. Pierce Foundation reviewed the properties and performance of materials for use in these climates, emphasizing the importance of thermal characteristics in his paper. Problems of deterioration were covered in a paper by Bruce M. Holmes of the Australian Commonwealth Scientific and Industrial Research Organization.

Mechanical solutions to hot-weather living were presented during the last afternoon of the conference. W. R. Woolrich of the University of Texas pointed out in his paper on heating and cooling problems that most people in southern regions are refugees from heat, but the buildings they live and work in are designed for cold weather, with a disproportionate amount invested in heating systems at the expense of proper cooling devices. Another inter-

esting technique for reducing the effects of solar radiation was the use of roof sprays, described by George E. Sutton of the University of California. Experiments conducted by his institution show that a rotating roof spray can be made to maintain a surface temperature of 100 degrees on a roof which would normally have a temperature of 150 degrees.

Evaporative cooling is especially effective in hot-dry climates. R. S. Farr of the Farr Company in Los Angeles described the process of adiabatic cooling and pointed out the economies of the well engineered and modernized version of the "desert cooler." The problems in dehumidification were reviewed by T. H. Urdahl.

In general, the conference effectively followed the pattern of most Building Research Advisory Board symposia in which *a)* the building technology pertinent to these climates was reviewed, *b)* the research work currently in progress was discussed, and *c)* those areas still in need of research were identified. During the last day of the meeting, representatives of the three regional subcommittees who had a part in the formation of the conference (University of California at Los Angeles, University of Florida, and University of Texas) met and decided that the conference had pointed out the need for a comprehensive handbook on designing for these climates. They also felt that the Board's preliminary bibliography on building in hot-humid and hot-dry climates should be expanded. Accordingly, this bibliography is being circulated to competent sources here and abroad for amplification and refinement.

SCIENCE NEWS

LEWIS HILL WEED

It was with deep regret that the National Academy of Sciences–National Research Council learned of the death of Lewis Hill Weed on December 21. Dr. Weed first came to the Council in 1935 as a member of the Medical Fellowship Board while he yet held the posts of Director of the Johns Hopkins University School of Medicine and professor of anatomy. In 1939, he accepted the chairmanship of the Division of Medical Sciences and, from then until compelled by illness to resign in 1950, he devoted to it his full time and effort. Under his leadership, the Division grew from a token force in 1940 to a complement of 315 members representing the full potential of civilian medical science.

Dr. Weed held other posts of great responsibility: he was a member of the Health and Medical Committee of the Council of National Defense, 1940–41; vice-chairman of the Committee on Medical Research, Office of Scientific Research and Development, 1941–47; chairman of the Medical and Health Advisory Committee, American Red Cross; chairman of the Advisory Board for Health Services, American Red Cross, 1945–47; and member of the Board of Honorary Consultants, Army Medical Library, 1944–49.

With hostilities at an end, he turned to the challenging problems of transition and of peace. He had already shown in the medical sciences how effective can be the mingling of disciplines in a concerted wartime effort. In the conception and organization of the Committee on Growth, he created an archetype for mobilizing scientists of diverse skills and focusing those skills on a problem in human biology. Likewise, he early recognized that the beginnings of a great human experiment, however tragic, had been made on August 6, 1946 in Hiroshima; it was largely through his efforts that the Atomic Bomb Casualty Commission, which has now observed such latent biological effects as cataract and leukemia, was created. In appointing the Committee on Veterans' Medical Problems, he recognized the value to medical science

of long-term studies of the natural history of disease, which can be made in veterans' hospitals as nowhere else in the country.

Dr. Weed was awarded the Medal for Merit and the Order of the British Empire in recognition of his great service to his own country and her ally, Great Britain.

He will be long remembered in affection and esteem among his many associates in the Academy–Council.

CHAIRMAN APPOINTED IN DIVISION OF ANTHROPOLOGY AND PSYCHOLOGY

Harry L. Shapiro, Curator of Anthropology, American Museum of Natural History, New York City, was appointed Chairman of the Division of Anthropology and Psychology, effective January 1. Under the new plan of annual rotation in office which will take effect on July 1, S. S. Stevens, former Chairman of the Division and Director of the Psychoacoustic Laboratory at Harvard University, will serve as Past-Chairman. A Chairman-designate will be named shortly to succeed Dr. Shapiro on July 1, 1954.

Dr. Shapiro received his Ph. D. degree from Harvard University in 1926. Besides directing the anthropological program of the American Museum of Natural History, he has been professor of anthropology at Columbia University. He was elected to the National Academy of Sciences in 1949.

STAFF APPOINTMENT IN DIVISION OF GEOLOGY AND GEOGRAPHY

Robert W. Webb, professor of geology at Santa Barbara College of the University of California, has been appointed Executive Secretary of the Division of Geology and Geography of the National Research Council and Executive Director of the American Geological Institute. Dr. Webb, who fills the position vacated by David M. Delo when he resigned to accept the presidency of Wagner College last July, assumed his new duties on January 1.

Dr. Webb received his Ph. D. degree in geology from California Institute of Technology in 1937. He joined the faculty of the University of California at Los Angeles in 1932 and remained there until 1948, when he was transferred to the Santa Barbara campus as professor of geology. Between 1943 and 1952 he held various administrative posts: he served as coordinator of army training during World War II, campus coordinator of veterans' affairs, acting associate dean of the College of Letters and Science, and university coordinator of veterans' affairs for all campuses of the University of California.

He is currently on leave from the University. His special fields of interest are geomorphology, petrology, and geological education.

MILITARY MANPOWER PROBLEMS

Attention has frequently been called to the fact that the time will soon be reached when military manpower demands will be hard to meet. It now appears that that time is rapidly approaching and is being foreshadowed by present events. The magnitude of draft calls is one of these events. Nearly 50,000 men per month have been called in the past few months, and quotas in excess of 50,000 have been established for February and are indicated for the succeeding months. This means that from now on inductions will be more heavily concentrated in the nineteen-year-old age group.

These facts have led to a re-examination of deferment policies within the Government, and, presumably, policy decisions will be made as soon as the new Administration has had an opportunity to evaluate the situation.

It seems likely at this point that the student deferment program will be modified to increase the requirements for individuals to establish bases for deferment. While no decisions have been reached as yet, tentatively there appears to be agreement on the need for raising criteria and therefore reducing the number of students eligible for deferment beginning with the sophomore class in college. The greatest change in criteria will undoubtedly be made in the case of beginning graduate students. Some of the suggestions which have received serious administrative attention would reduce the number of graduate students eligible to continue in graduate schools. However, here, too, no decision has yet been made.

The same intensified consideration is being given to the deferment of scientists

and other technical personnel now deferred for scientific and technical activities in industry and research laboratories. Recommendations have been made which would virtually make impossible continued deferments for employment purposes.

ACADEMY–COUNCIL LECTURE SERIES

The National Academy of Sciences–National Research Council has resumed the lecture series inaugurated last year. These lectures, to which the scientific public is invited, are delivered by prominent scientists from the United States and abroad. They are scheduled at four o'clock in the afternoon and are followed by an informal reception at which tea is served.

On December 3, Harold C. Urey, Distinguished Service Professor of Chemistry at the Institute of Nuclear Studies, University of Chicago, gave a lecture on "The Chemical Composition and Origin of Meteorites."

Maurice Ewing, professor of geology at Columbia University, spoke on "Sedimentation in the Atlantic Ocean," on December 18.

COMMITTEE ON SPECTRAL ABSORPTION DATA

Under the joint sponsorship of the Divisions of Chemistry and Chemical Technology and of Physical Sciences, the former Committee on Infrared Absorption Data has been enlarged and reconstituted as the Committee on Spectral Absorption Data. Members of the Committee are: W. R. Brode, National Bureau of Standards, *Chairman;* D. H. Anderson, Eastman Kodak Company; R. R. Brattain, Shell Development Company; E. C. Creitz, National Bureau of Standards; B. L. Crawford, University of Minnesota; R. A. Friedel, U. S. Bureau of Mines; J. H. Gould, National Bureau of Standards; R. R. Hampton, U. S. Rubber Company; L. E. Kuentzel, Wyandotte Chemicals Corporation; R. C. Lord, Massachusetts Institute of Technology; E. J. Rosenbaum, Sun Oil Company; E. I. Stearns, American Cyanamid Company; J. D. Stroupe, Rohm and Haas Company; and J. M. Vandenbelt, Parke, Davis, and Company.

COMMITTEE ON NUCLEAR SCIENCE

A new Subcommittee on Nuclear Geophysics of the Committee on Nuclear Science has been established with the following membership: L. T. Aldrich, Carnegie Institution of Washington, *Chairman;* P. M. Hurley, Massachusetts Institute of Technology; M. G. Inghram, University of Chicago; and A. O. Nier, University of Minnesota.

Membership of the Subcommittee on Shipment of Radioactive Substances has been reconstituted as follows: R. D. Evans, Massachusetts Institute of Technology, *Chairman;* L. F. Curtiss, National Bureau of Standards; W. G. McKenna, Bureau of Explosives; W. S. Michel, National Research Council of Canada; K. Z. Morgan, Oak Ridge National Laboratory; H. E. Seemann, Eastman Kodak Company; and Forrest Western, Atomic Energy Commission.

COMMITTEE ON DISASTER STUDIES

The Committee on Disaster Studies of the Division of Anthropology and Psychology held a conference on "research problems of civil defense," January 9 and 10, in cooperation with the Federal Civil Defense Administration. Special attention was given to problems which, in the opinion of the Administration, needed further research or pooling of scientific information.

Members of the Committee, representatives of federal agencies, staff members of the National Research Council and Federal Civil Defense Administration, and invited research scientists attended a briefing session presented at the National Civil Defense Training Center. This session included a demonstration of a hypothetical atomic attack and civil defense operation in "City X," carried out with the aid of a three-dimensional map.

The conference was one of a series of steps being taken by the Committee on Disaster Studies to define and clarify the major research problems in the area of disaster studies, to gain a clearer understanding of agency problems, and to make existing scientific knowledge and advice available to agencies responsible for making plans for civil defense and carrying them out.

COMMITTEE ON DEVELOPMENTAL BIOLOGY

The Committee on Developmental Biology, under the chairmanship of Paul Weiss, has entered its second year of operation with plans for further conference hearings on underdeveloped areas in the field of growth and differentiation and for intensified contacts with the working community through a system of regional correspondents. The Committee is arranging small, regional meetings in which the various correspondents gather, with faculty members and students from neighboring institutions, for a discussion of topics of common interest. These meetings serve to stimulate interdisciplinary participation in the study and discussion of developmental biology, a field which covers such diverse disciplines as agriculture, anatomy, bacteriology, cytology, embryology, endocrinology, genetics, immunology, nutrition, pathology, pediatrics, plant physiology, and zoophysiology.

The first regional meeting, organized by Correspondent Clifford Grobstein of the National Cancer Institute, was held at the National Institutes of Health in Bethesda, Md., with about forty invited conferees representing Catholic University, George Washington University, Howard University, the University of Maryland, the University of Virginia, the National Institutes of Health, and the National Science Foundation, and including the members of the Committee and some correspondents from outlying areas. The second regional meeting, arranged by Correspondent J. Walter Wilson at Brown University, was attended by about 150 representatives of institutions from the New England area. The Committee considers the facilitation of such regional activities one of its primary objectives.

The Committee has concluded preparations for a conference on "Mitogenesis in relation to Morphogenesis," in which the many fragments of information on the factors causing cell division and on the relation of cell division to morphogenesis will be brought together and critically reviewed. The conference will be held in March on or near the campus of the University of Texas, where Jackson Foster, a member of the Committee, is in charge of local arrangements. About twenty-five investigators, including Professor Bullough of the University of London and Professor Lettre of the University of Heidelberg, will participate.

The Committee has acted in an advisory capacity in preparations for a conference on the effects of radiation on development, to be held at the Oak Ridge National Laboratory in April under the direction of Alexander Hollaender. Plans are also being made for a joint meeting with the Society for the Study of Development and Growth to deal with the problem of specificity in development, particularly the immunological aspects.

In its efforts to promote greater awareness of the importance of the field of developmental biology, the Committee sponsored two half-hour programs of the National Broadcasting Company dealing with "The Study of Growth and Its Meaning to Mankind."

The Committee is now engaged in collecting, through its correspondents, all possible information on the attention given to developmental biology in educational programs from the high-school level up through graduate education, including professional training in medicine and agriculture. As a result of preliminary Committee activities, several institutions have established joint seminars in developmental biology. The Committee also is compiling a roster of personnel including the younger investigators and teachers interested in developmental biology. In general, the Committee tries to serve as a nucleus for the consolidation and articulation of the broad interests in the area of growth and development.

The following changes in Committee membership have taken place: Shields Warren, Harvard Medical School, has replaced W. W. Greulich, recently appointed Science Attaché to the United States Embassy in Bonn, Germany; George W. Nace is acting as Staff Assistant to the Committee; S. Hutner of the Haskins Laboratories and A. M. Schechtman of the University of California have been appointed correspondents.

COMMITTEE ON LATIN AMERICA

The Committee on Latin America, established in 1941 as a joint committee of the American Council of Learned Societies, the Social Science Research Council, and the National Research Council, was reconstituted this past year. It is now in its second generation, so to speak, in that the present members are, for the most part, students of the members of the original committee.

The present Committee, under the chairmanship of Charles Wagley of Columbia University, formerly Vice-Chairman of the Division of Anthropology and Psychology, has set out to reassess existing knowledge of Latin America with a view to applying that knowledge to programs in Technical Cooperation and Technical Assistance which are now under way in the several American republics. The Committee includes George Foster, until recently Director of the Institute of Social Anthropology, Smithsonian Institution; Sol Tax of the University of Chicago; Benjamin Paul, Harvard School of Public Health; Sidney Mintz, Yale University; and Elman Service, Columbia University.

The Committee met on December 12, and again on December 27, on the occasion of the meetings of the American Anthropological Association in Philadelphia. The group decided to launch several projects, including the preparation of a summary of and appraisal of existing knowledge of the anthropology of Latin America, to be published as a special issue of the *American Anthropologist.*

COMMITTEE ON GEOGRAPHY

The Committee on Geography, Advisory to the Office of Naval Research, met on November 10 to evaluate research proposals submitted to the Office of Naval Research. The next meeting of the Committee will probably be held in February.

Members of the Advisory Committe for 1952–53 are: Charles B. Hitchcock, American Geographical Society, *Chairman;* G. Donald Hudson, University of Washington, *Vice-Chairman;* Loyal Durand, Jr., University of Tennessee; Edward B. Espenshade, Jr., Northwestern University; Henry M. Kendall, Miami University; Hibberd V. B. Kline, Jr., Syracuse University; Fred B. Kniffen, Louisiana State University; Walter M. Kollmorgen, University of Kansas; Richard F. Logan, University of California; Harold H. McCarty, University of Iowa; C. W. Thornthwaite, Johns Hopkins Laboratory of Climatology; and Glen T. Trewartha, University of Wisconsin.

A circular giving particulars concerning opportunities offered through the Office of Naval Research for support of research projects in geography is available upon request from either the Office of Naval Research or the Division of Geology and Geography, National Research Council.

CONFERENCE ON PHOTOSYNTHESIS

About eighty research workers in disciplines from theoretical physics to experimental enzymology gathered at Gatlinburg, Tenn., October 29–November 1, for an open discussion of photosynthesis. The conference, organized by the Committee on Photobiology of the National Research Council, was given financial support by the National Science Foundation, the Office of Naval Research, and the Atomic Energy Commission. Its purpose was to provide an analysis of our present knowledge of photosynthesis and to encourage research in the several areas where major gaps in our knowledge still exist.

There were six half-day sessions at which the following topics were discussed: *1)* Molecular structure of chlorophyll-type pigments and the spectra of chlorophyll (introduced by J. R. Platt, University of Chicago); *2)* Fluorescence of chlorophyll in its bearing on photosynthesis (by E. C. Wassink, Plant Physiology Laboratory, Wageningen, Netherlands); *3)* The efficiency of photosynthesis (by F. S. Brackett, National Institutes of Health); *4)* Oxygen evolution by isolated plastids (by R. Hill, Biochemical Laboratory, Cambridge University, England); *5)* The path of carbon during its photosynthetic assimilation (by M. Calvin, University of California); and *6)* Characteristics of the biochemical reducing pool (by H. Gaffron, University of Chicago). In addition, at a night session, M. Kasha, Florida State University, and H. Kallman, New York University, led a discussion on the question of energy trans-

port from one pigment to another within the plastid. The possibilities for mass culture of algae were also discussed by H. Tamiya of the Tokugawa Institute for Biological Research in Tokyo, B. Kok of Wageningen, Netherlands, J. E. Myers of the University of Texas, and others.

A rather thorough understanding has now been reached for the course of carbon dioxide assimilation except for the initial step. This also is the case for energy transfer between the several chlorophylls and carotenoids in grana of various organisms. The model has been set for plastids carrying out the "Hill reaction" to be coupled reductively to a large variety of DPN- and TPN-linked systems.

PREVENTION OF DETERIORATION CENTER

A conference on the relationship between chemical structure and biological activity as it relates to fungitoxicity was held November 24 and 25 at the National Academy of Sciences–National Research Council. This meeting was sponsored by the Scientific Advisory Committee of the Prevention of Deterioration Center, with Kenneth V. Thimann, Chairman of the Committee, presiding. Approximately thirty persons from the Department of Defense, universities, and research organizations attended the meeting.

The following papers were presented: "Methods of determining fungicidal activity and their underlying principles," by J. G. Horsfall, Connecticut Agricultural Experiment Station; "The germination of fungus spores and its inhibition," by Paul J. Allen, University of Wisconsin; "Enzyme inhibitors and their mode of action," by David E. Green, University of Wisconsin; "Some special aspects of enzyme inhibition," by Walter D. Bonner, Jr., Smithsonian Institution; "The action of chelating substances on filamentous fungi," by W. J. Nickerson, Rutgers University; "The action of 8-hydroxyquinoline and other chelating agents," by E. George Kovach and S. S. Block, University of Florida; "Phenols and phenol derivatives as fungicides," by Harold G. Shirk, Prevention of Deterioration Center; "Fungicidal activity of biphenols," by Paul B. Marsh, Department of Agriculture; "The mode of action of sulfur fungicides," by H. L. Klopping, E. I. du Pont de Nemours and Company; and "Fungicidal activity of acrylic acid derivatives," by Carl J. Wessel, Prevention of Deterioration Center.

At the final session of the conference, general statements on the relationship of structure and activity and recommendations for work for the future were made by R. C. Elderfield of the University of Michigan, L. P. Hammett of Columbia University, and Glenn A. Greathouse of the Prevention of Deterioration Center.

COMMITTEE ON FEED COMPOSITION

R. V. Boucher, Chairman of the Committee on Feed Composition, has announced that the Committee's program will be supported with funds provided by the United States Department of Agriculture. Donald F. Miller, who did his graduate work in animal husbandry at the State College of Washington, has been made Technical Secretary of the Committee.

The Committee's current objective is to compile analytical data for some thirty-odd chemical nutrients in agricultural by-products used in commercially mixed animal feeds.

SYMPOSIUM ON NUTRITION UNDER CLIMATIC STRESS

A Symposium on Nutrition under Climatic Stress was held at the National Academy of Sciences–National Research Council December 4 and 5, under the joint sponsorship of the Quartermaster Food and Container Institute and the Subcommittee on Nutrition of the Committee on Foods of the Advisory Board for Quartermaster Research and Development. The program was arranged by Donald K. Tressler and Harry Spector of the Food and Container Institute and E. M. Nelson of the Food and Drug Administration, Chairman of the Subcommittee on Nutrition. The Symposium brought together many of the outstanding researchers in this field both in this country and in Canada.

Topics discussed included service operations under climatic stress, animal experimentation, human experimentation, and needs for further research. At a special evening session, the group heard Sir

Hubert Wilkins, consultant to the Office of the Quartermaster General, speak on "Food Problems in Exploring the Arctic."

The proceedings of the Symposium will be published at a later date and, it is hoped, will provide a basis for planning future research programs.

NICKEL CONSERVATION UNDER FULL MOBILIZATION

At the request of the Munitions Board and the National Production Authority, through the Research and Development Board, the Minerals and Metals Advisory Board formed a Nickel Conservation Panel in October, 1951 to study nickel conservation under full mobilization conditions.

The Panel, composed of representatives of industry and liaison representatives from Government agencies, has been examining probable full mobilization requirements in relation to supply, has reviewed the technology of the widely different uses of nickel, and has given consideration to alternative materials and potential savings of nickel under wartime conditions. Since the establishment of the Panel, eleven formal meetings have been held.

To date, twelve topical reports have been prepared by Panel members. Certain of the reports evaluate the uses of nickel by alloy classes such as the constructional alloy steels, the wrought stainless steels, heat- and corrosion-resistant alloy castings, alloy gray irons, nickel-base alloys, copper-base alloys, and aluminum-base alloys. Other reports examine nickel and its alloys from the point of view of end uses in individual industries, i.e. nickel conservation in the aircraft industry, in the electrical and electronics industries, in ordnance, and in the chemical and processing industries.

The magnitude of the task of preparing a nickel conservation program is due to two factors: *1)* the difficulty of forecasting nickel requirements for full mobilization, and *2)* the diversified uses of nickel in industrial and military America. The program has a significant role in practically all important metal-consuming industries. It is expected that the work of the Panel may be completed during the first quarter of 1953.

INTERNATIONAL RELATIONS

WORLD METEOROLOGICAL ORGANIZATION

The United States Government has invited the World Meteorological Organization to hold two Commission meetings in Washington this spring. Both meetings will be held in the International Conference Suite of the Department of State, the Commission for Climatology meeting March 12–30 and the Commission for Synoptic Meteorology, April 2–29.

The World Meteorological Organization has extended invitations to its members to send delegates to the meetings, and the United Nations and those Specialized Agencies of the United Nations having a special interest in meteorological problems have been invited to send observers.

SYMPOSIUM ON NEUROSECRETION

A symposium on neurosecretion will be held at the Zoological Station, Naples, Italy, May 11–16. Investigators from England, Sweden, Denmark, Germany, France, Italy, Japan, and the United States have already announced their intention to participate in the symposium.

The cytological, physiological, chemical, and pharmacological aspects of neurosecretion in invertebrates and vertebrates will constitute the subjects for discussion at the symposium.

More detailed information concerning the symposium and its program can be obtained from Ernst Scharrer, Department of Anatomy, University of Colorado School of Medicine, Denver 20, Colo.

INTERNATIONAL ASSOCIATION FOR HYDRAULIC RESEARCH

The plenary meeting of the International Association for Hydraulic Research, to be held jointly with the Hydraulics Division of the American Society of Civil Engineers, will take place at the University of Minnesota, August 31–September 4. The Section on Hydrology of the American Geophysical Union and the Council on Wave Research will hold technical meetings before and after the plenary session of the Association.

The subject matter for the program of the meetings was outlined in Vol. II, No. 3 of NEWS REPORT. Manuscripts to be considered for the program and for publication should reach Lorenz G. Straub, President of the International Association for Hydraulic Research, St. Anthony Falls Hydraulic Laboratory, Minneapolis, Minn., not later than March 1.

PACIFIC SCIENCE CONGRESS

The Eighth Pacific Science Congress will be held in the Philippines at Quezon City, Manila, Los Baños, and Baguio, November 16–28, 1953, under the auspices of the Republic of the Philippines and the National Research Council of the Philippines. Copies of the preliminary announcement may be obtained from the Executive Director of the Pacific Science Board, 2101 Constitution Avenue, Washington 25, D. C. United States scientists planning to attend the Congress are urged to notify the Pacific Science Board, which will coordinate plans for United States participation.

The scientific program for the Congress will cover the following fields: geology and geophysics, meteorology, oceanography, zoology, botany, soil resources, forestry, agriculture, anthropology, public health, nutrition, and social sciences. General symposia will be held on such subjects as rice enrichment; Pacific oceanography; management and utilization of natural resources; geology and mining industry; plant geography; typhoons; anthropological subjects with special emphasis on recent archaeological finds, outstanding ethnographical studies and problems, and recent work in linguistics; historic and prehistoric population movements into the Pacific and major lines of migration; crop improvement; animal improvement in the Pacific; reforestation; Pacific conservation; museums; and international organizations.

The first congress was held in Honolulu in 1920, and, since then, meetings have been held in Melbourne and Sydney (1923), Tokyo (1926), Batavia and Bandoeng (1929), Canada (1933), Berkeley, Stanford, and San Francisco (1939), and Auckland and Christchurch (1949). The last congress had seventy-five participants from continental United States, Hawaii, and the Trust Territory of Micronesia. Since that time, a great deal of active scientific work in many disciplines has been undertaken in various parts of the Pacific with the encouragement and sponsorship of various national and international organizations, including the Pacific Science Board of the National Research Council and the South Pacific Commission, an advisory and consultative body set up by the governments of Great Britain, France, the Netherlands, the United States, Australia, and New Zealand.

INTERNATIONAL MEETINGS, 1953

The following list of international meetings includes only those to be held under the auspices of the International Council of Scientific Unions and its constituent unions:

April 15–17	Colloquium on Optical Problems of Vision, *Madrid*
April 20–21	International Commission on Optics (International Union of Pure and Applied Physics), *Madrid*
May	Symposium on Concepts of Complementarity and of Individuality in Biology and Sociology (International Council of Scientific Unions and International Council for Philosophy and Humanistic Studies), *place undecided*
May 11–16	International Symposium on Neurosecretion, *Naples*
June 1–6	Symposium on the Scientific Organization of Botanical Gardens (International Union of Biological Sciences), *Paris*
June 16–24	International Commission on Acoustics (International Union of Pure and Applied Physics), International Congress on Electroacoustics and International Symposium on the Sound Insulation of Light-Weight Structures, *Delft, Netherlands*

June 23–27	Symposium on the Coordination of Galactic Research (International Astronomical Union), *Groningen, Netherlands*
July	Joint Commission on Radioactivity, *Copenhagen*
July 5–11	Commission on Cosmic Rays (International Union of Pure and Applied Physics), Colloquium on Cosmic Rays, *Bagnères de Bigorre, France*
July 13–18	Symposium on Gas Dynamics of Interstellar Clouds (International Astronomical Union and International Union of Theoretical and Applied Mechanics), *Cambridge, England*
July 14–25	Sixth International Congress of Radiobiology, *Copenhagen*
July 26–31	Joint Commission on Rheology, Second International Congress on Rheology, *Oxford, England*
July 29–Aug. 7	Seventeenth Conference of International Union of Pure and Applied Chemistry and Thirteenth Congress of Pure and Applied Chemistry, Meeting of Section on Physical Chemistry, Symposia on Chemistry of Wood and Wood Constituents and Macromolecules, *Stockholm and Uppsala, Sweden*
Aug. 3–7	Third General Assembly of International Union of History of Science, Seventh International Congress of History of Science, *Jerusalem*
Aug. 5–12	International Congress of Zoology, International Commission on Zoological Nomenclature, *Copenhagen*
Aug. 18–21	Eleventh General Assembly of International Union of Biological Sciences, *Nice, France*
Aug. 19	Twelfth International Congress on Limnology, *Cambridge, England*
Aug. 24–31	Ninth International Congress of Genetics, *Bellagio, Italy*
September	Joint Commission on High Altitude Research Stations, *Boulder, Colo.*
September	Symposium on Gravimetry (International Union of Geodesy and Geophysics), *Paris*
Sept. 1–5	International Congress on Biometry, *Bellagio, Italy*
Sept. 6–12	Sixth International Congress of Microbiology, *Rome*
Sept. 15–23	Colloquium on Fundamental Theoretical Physics, *Tokyo and Kyoto, Japan*

RECORD OF MEETINGS

November

1	Committee on Developmental Biology Committee on Pathology
1–2	Conference on Photosynthesis, *Gatlinburg, Tenn.*
2	Committee on Animal Resources
3	Committee on Hearing
5	Subcommittee on Tuberculosis
6	Aircraft Committee, Nickel Conservation Panel
6–7	Committee on Disaster Studies
7	Minerals and Metals Advisory Board Pacific Science Board, Annual Meeting
8	Committee on Nuclear Science
10	Subcommittee on Cardiovascular Diseases Subcommittee on Chemistry Subcommittee on Toxicology
10–11	Committee on Geography, Advisory to Office of Naval Research
11	Food Protection Committee
12	Food Protection Committee and Industrial Liaison Panel, Joint Meeting Subcommittee on Burns
13	Ad hoc Committee on Food Fortification Policy American Geological Institute, Board of Directors, *Boston, Mass.* Committee on Dietary Allowances American Institute of Biological Sciences, Publications Committee Committee on Survey of Food and Nutrition Research Division of Engineering and Industrial Research, Executive Committee Food and Nutrition Board, Executive Committee
14	Committee on Wool-Type Fabrics and Blends and Committee on Flame and Thermal Protective Combat Clothing, Joint Meeting, *Edgewood, Md.* Subcommittee on Food Supply
14–15	Food and Nutrition Board
15	Committee on Review Articles in Geology and Geophysics, *Boston, Mass.* Committee on Tables of Constants and Numerical Data Committee on Vitamin Studies at Elgin State Hospital

16 Division of Chemistry and Chemical Technology, Annual Meeting
Committee on Geophysics, Advisory to Office of Naval Research, *Boston, Mass.*
Committee on Use and Care of Natural Resources, *New York City*

16–17 Review Committee for Section I of the Glossary of Terms in Nuclear Sciences and Technology

17 Building Research Advisory Board
Conference on Off-Street Parking
Subcommittee on the Nervous System

18 Subcommittee on Blood Coagulation

18–19 Conference on Housing and Building in Hot-Humid and Hot-Dry Climates

19 Stainless Steel Committee of Nickel Conservation Committee
Subcommittee on Pesticides

19–20 Committee on Regional Development of Mathematics

20 American Institute of Biological Sciences, Membership Committee
Committee on Surgery

20–21 Ad hoc Committee on Small High-Pressure Steam Boilers, *Jeffersonville, Ind.*

21 Advisory Committee on Intergovernmental Relationships in Highway Affairs

22 Committee on Globes (Construction and Use of Precise Globes and Spherical Maps)
Subcommittee on Malaria

24 American Institute of Biological Sciences, Advisory Committee on Biochemistry to the Office of Naval Research, *Alta, Utah*
Subcommittee on Infectious Diseases and Chemotherapy
Subcommittee on Shelter and Clothing, *Boston, Mass.*

24–25 Commission on Human Resources and Advanced Training, *Ann Arbor, Mich.*
Scientific Advisory Committee of the Prevention of Deterioration Center

25 Committee on Medicine
Committee on Wool-type Fabrics and Blends, *New York City*

26 American Institute of Biological Sciences, Committee on the Handbook of Biological Data

29–30 Committee on Animal Nutrition, *Chicago, Ill.*

December

1 Advisory Committee on Off-Street Parking
Advisory Selection Committee for the Fulbright Program in Engineering

2–3 Conference on School Building Costs

4 Committee on Mathematics, Advisory to Committee on International Exchange of Persons

4–5 Advisory Committee on Hazards of Ammonium Nitrate Transportation

5 Committee on Developmental Biology
Committee on Veterans Medical Problems
Symposium on Nutrition under Climatic Stress

6 Sections and Panels of Committee on Growth

7 Governing Board, National Academy of Sciences–National Research Council
Committee on Disaster Studies
Executive Committee and Panel Chairmen of Committee on Growth

8 Ad hoc Conference on Dextran Fractions
Committee on Toxicology
Conference on Gamma Globulin

9 Committee on Developmental Biology, *Providence, R. I.*
Subcommittee on Animal Reservoirs and Vectors of Disease
Subcommittee on Shock
Subcommittee on Water Supply

10 Committee on Blood and Related Problems
Heating and Ventilating Advisors for Defense Production Administration Project

11 Electrical Advisors for Defense Production Administration Project
Nickel Conservation Panel

12 Advisory Selection Committee on the Medical Sciences (Fulbright Panel)
Committee on Latin America
Committee on Naval Medical Research

13 Committee on International Relations in Anthropology
Committee on Naval Medical Research

15 Building Research Advisory Board Project Steering Committee for Survey of Temporary and Semi-Permanent Navy Structures
Subcommittee on Atmospheric and Industrial Hygiene
Subcommittee on Waste Disposal

16 Committee on Sanitary Engineering and Environment

17 Materials for Use at Elevated Temperature

18 Advisory Board on Quartermaster Research and Development, *Chicago, Ill.*
Committee on Problems of Alcohol

19 Task Group for Federal Construction Council

22 Committee on Fabrics for Body Armor
Advisory Group on Life Probability of Buildings

29–30 Review Committee for Section I of the Glossary of Terms in Nuclear Sciences and Technology

30 Building Research Advisory Board Steering Committee for Study of Conservation in Building Construction
Task Group for Federal Construction Council

NEW PUBLICATIONS

Connecticut Highway Maintenance Production Study. Highway Research Board Special Report No. 8. Academy–Council Publication No. 235. 1952. 232 p. $2.70.

Curing Concrete Pavements. Highway Research Board Current Road Problems No. I-R. 1952. 19 p. $0.30.

Departments of Geological Science in Educational Institutions of the U.S. and Canada. American Geological Institute Report No. 8. Academy–Council Publication No. 242. (December, 1952 Revision of A.G.I. Report No. 6). 175 p. $1.00.

Highway Sufficiency Ratings. Highway Research Board Bulletin No. 53. Academy–Council Publication No. 228. 1952. 76 p. $0.90.

Land Acquisition and Control of Adjacent Area. Highway Research Board Bulletin No. 55. Academy–Council Publication No. 233. 1952. 58 p. $0.90.

Load Capacity of Roads Affected by Frost. Highway Research Board Bulletin No. 54. Academy–Council Publication No. 232. 1952. 21 p. $0.30.

Night Visibility. Highway Research Board Bulletin No. 56. Academy–Council Publication No. 236. 1952. 82 p. $1.20.

Parking Turnouts and Rest Areas. Highway Research Board Special Report No. 7. Academy–Council Publication No. 230. 1952. 56 p. $0.75.

Report of the Committee on the Measurement of Geologic Time, 1951–1952. Academy–Council Publication No. 245. 151 p. $1.50.

Survey of Housing Research in the United States. Conducted by Building Research Advisory Board for Housing and Home Finance Agency. Washington, Government Printing Office, 1952. 273 p. $3.00.

Therapeutic Nutrition, by Herbert Pollack and Seymour L. Halpern. Academy–Council Publication No. 234. 1952. 94 p. $1.00.

Notice of Academy Meetings

NATIONAL ACADEMY OF SCIENCES

Annual Meeting, Washington, D. C., April 27–29
Autumn Meeting, Massachusetts Institute of Technology, *dates to be announced*

NATIONAL ACADEMY OF SCIENCES—NATIONAL RESEARCH COUNCIL

Governing Board, Washington, D. C., February 8
Governing Board, Washington, D. C., April 26
Governing Board, Washington, D. C., June 21

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